AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for manufacturing a micro-actuator comprising the steps of:

forming a top structure by ~~etching both sides of~~ processing a first plate, the top structure comprising a substantially rectangular stage, a plurality of driving comb-type electrodes formed on the bottom of the stage, ~~a torsion bar positioned in the middle of both edges facing the stage, and~~ a first frame layer separated from and surrounding the stage along the periphery the stage and having a ~~of a predetermined~~ first height ~~supporting the torsion bar~~, and at least one torsion bar for suspending the stage from the first frame layer and providing a restoring force upon rotation of the stage along an axial direction of the torsion bar;

forming a bottom structure by ~~etching both sides of~~ processing a second plate and a base plate, the bottom structure comprising a base plate, ~~a second frame layer formed on the base plate and having a predetermined height corresponding to the first frame layer height, and~~ a plurality of fixed comb-type electrodes formed on the base plate, and a second frame layer formed on the base plate and surrounding the fixed comb-type electrodes and having a ~~predetermined~~ second height ~~corresponding to the first frame layer height~~; and

joining the top and bottom ~~structure~~ structures to form one body by forming a eutectic bonding layer between the first frame layer and the second frame layer, said first frame layer being aligned with the second frame layer so that the driving comb-type electrodes interdigitate the fixed comb-type electrodes, ~~and superimposing the driving and fixed comb-type electrodes such that the extensions of the driving comb-type electrodes alternate with the extensions of the fixed comb-type electrodes.~~

wherein an electrostatic force induced between the driving comb-type electrodes and the fixed comb-type electrodes causes the stage to rotate along the axial direction during operation of the micro-actuator.

2. (Currently Amended) The method for manufacturing a micro-actuator of claim 1, wherein the step of forming [[the]] a top structure ~~further~~ comprises the steps of:

forming a top separate region on one side of the first plate, said top separate region having an etched pattern that corresponds ~~with a predetermined width and depth corresponding~~ to [[the]] a space between the stage and the first frame layer;

forming a top metal layer on a region over the other side of the first plate, said region corresponding to the first frame layer; [[and]]

forming an mask layer on the other side of the first plate, said mask layer being patterned to form the stage, driving comb-type electrodes, torsion bar and the first frame layer upon etching the first plate;

etching the first plate with the mask layer to form the top structure; and

removing the mask layer.

~~forming the driving comb-type electrodes with a predetermined height on the bottom of the stage, while the separate region is penetrated by etching the bottom of the first plate with a predetermined pattern.~~

3. (Currently Amended) The method for manufacturing a micro-actuator of claim 1, wherein the step of forming [[the]] a bottom structure ~~further~~ comprise the steps of:

forming signal lines on the top surface of the base plate with a predetermined pattern corresponding to [[the]] constituent elements;

forming a bottom separate region on the bottom side of the second plate, said bottom separate region having an etched pattern that corresponds ~~with a predetermined width and depth corresponding~~ to [[the]] a space between the second frame layer and the fixed comb-type electrodes;

joining the bottom side of the second plate to the top surface of the base plate;

etching [[the]] a region corresponding to the second frame layer to a predetermined depth on the top side of the second plate;

forming a bottom metal layer on the etched [[part]] region of the second plate;

forming a mask layer on ~~the region~~ a portion corresponding to the second frame layer and the fixed comb-type electrodes [[on]] over the top side of the second plate; [[and]]

etching the second plate with the mask layer to form the fixed comb-type electrodes and the second frame layer; and

removing the mask layer.

~~forming the fixed comb-type electrodes with a predetermined height inside of the bottom separate region, while the bottom separate region is penetrated by etching to a predetermined depth the region that is not covered by the mask layer.~~

4. (Currently Amended) The method for manufacturing [[the]] a micro-actuator of claim 2, wherein the step of forming [[the]] a bottom structure ~~further~~ comprise the steps of:

forming signal lines on the top surface of the base plate with a predetermined pattern corresponding to [[the]] constituent elements;

forming a bottom separate region on the bottom side of the second plate, said bottom separate region having an etched pattern that corresponds ~~with a predetermined width and depth corresponding~~ to [[the]] a space between the second frame layer and the fixed comb type electrodes;

joining the bottom side of the second plate to the top surface of the base plate;

etching [[the]] ~~region~~ a part corresponding to the second frame layer to a predetermined depth on the top side of the second plate;

forming a bottom metal layer on the etched part of the second plate;

forming [[a]] an etching mask layer on ~~the region~~ a portion corresponding to the second frame layer and the fixed comb-type electrodes [[on]] over the top side of the second plate; [[and]]

etching the second plate with the etching mask layer to form the fixed comb-type electrodes and the second frame layer; and

removing the etching mask layer.

~~forming the fixed comb-type electrodes with a predetermined height inside of the bottom separate region, while the bottom separate region is penetrated by etching to a predetermined depth the region that is not covered by the mask layer.~~

5. (Currently Amended) The method for manufacturing a micro-actuator of claim 2, wherein the step of forming [[the]] a top metal layer ~~further~~ comprises the steps of:

forming a metal seed layer on the ~~bottom~~ other side of the first plate; and

forming a metal eutectic bonding layer by a plating method on the seed layer.

6. (Currently Amended) The method for manufacturing a micro-actuator of claim 5, wherein the step of joining the top and bottom structures into one body ~~further~~ comprises a step of performing the metal eutectic bonding at a predetermined temperature and pressure in order to ~~join the first frame layer of the top structure to the second frame layer of the bottom structure, and more specifically to~~ join the top metal layer of the first frame layer of the top structure to the bottom metal layer of the second frame layer of the bottom structure.

7. (Currently Amended) The method for manufacturing a micro-actuator of claim 3, wherein the step of ~~forming a bottom metal layer on the second frame layer of the bottom structure further~~ joining the top and bottom structures into one body comprises a step of performing the metal eutectic bonding at a predetermined temperature and pressure in order to ~~join the first frame layer of the top structure to the second frame layer of the bottom structure, and more specifically to~~ join the top metal layer of the first frame layer of the top structure to the bottom metal layer of the second frame layer of the bottom structure.

8. (Currently Amended) The method for manufacturing a micro-actuator of claim 1, wherein the bottom side of the second plate is joined to the top surface of the base plate by an anodic bonding process.

9. (Currently Amended) The method for manufacturing [[the]] a micro-actuator of claim 7, wherein the bottom side of the second plate is joined to the top surface of the base plate by an anodic bonding process.

10. (New) The method for manufacturing a micro-actuator of claim 1, wherein an optical mirror is formed on the top surface of the stage.

11. (New) The method for manufacturing a micro-actuator of claim 1, further including a plurality of sensor comb-type electrodes on the base plate, said sensor comb-type electrodes interdigitating a portion of the driving comb-type electrodes and being operative to generate a signal commensurate with a relative position of the fixed comb-type electrodes to the driving comb-type electrodes.